



# Pesmel Material Flow How

– production and logistics in harmony

Pesmel's unparalleled logistics expertise combines with world-class engineering to deliver industry-leading productivity and efficiency increases for new and existing mills.

**T**raditional metal production can be said to be 20 years behind the paper industry in terms of technology and progress. Poorly connected production phases are subject to inefficiencies, bottlenecks and high WIP (Work In Progress).

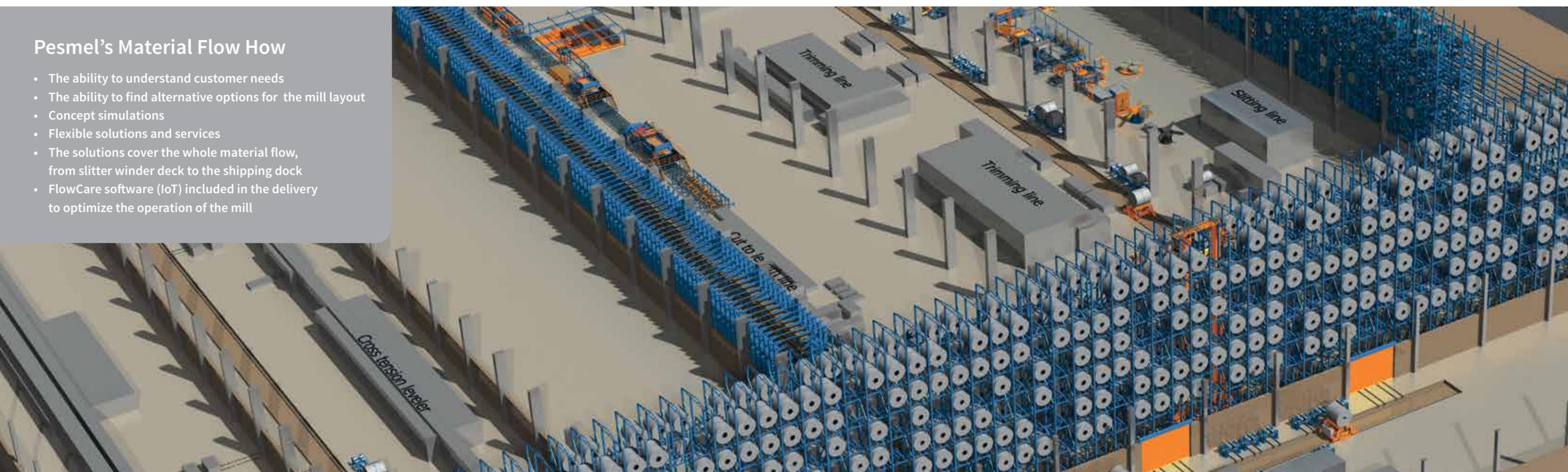
For more than 40 years, Pesmel has successfully applied its Material Flow How to a wide range of brown and green field mills. By balancing production and logistics, the material flows, buffering and storage are optimised, throughput is increased and lead times are significantly reduced.

In order to achieve high levels of mill efficiency, a true understanding of the big picture – what is really needed, and why – is essential. Once these needs are understood, finer details such as space-saving layouts that minimise material journeys and facilitate smooth material flows can be considered, along with other details such as optimal equipment choices and possible future expansion. As every mill is unique, so must be every solution by necessity. Pesmel's extensive knowledge of processes and engineering allows us to create layout concepts that dynamically map out internal logistics and materials flow through the mill.

As a full stack service provider, Pesmel delivers solutions that optimise mechanical, electrical PLC and ICT systems in a perfectly balanced, innovative offering. Whatever unique challenges a particular project may have, Pesmel has a proven track record of delivering material and information flows throughout seamlessly integrated production and logistics that raise overall mill efficiencies by up to 10% per annum. >>

## Pesmel's Material Flow How

- The ability to understand customer needs
- The ability to find alternative options for the mill layout
- Concept simulations
- Flexible solutions and services
- The solutions cover the whole material flow, from slitter winder deck to the shipping dock
- FlowCare software (IoT) included in the delivery to optimize the operation of the mill



### Defining production and logistical needs

The main goal of any mill is to produce high quality products for customers. Internal logistics are therefore crucial to ensuring smooth material flows, avoiding production bottlenecks and eliminating errors. In order to do so, we begin by helping our customers to define the absolute necessities for internal logistics: specific grade-related handling requirements, the amount of buffering capacity needed between production and shipping, packing method selection based on the mill's actual needs, as well as the preferred automation level. Our solutions aim to deliver full, real time information and control of all materials and material flows in the mill, fast and accurate material transfers between processes, flexible buffering functions between processes, and seamless integration with production. We are able to deliver tailored solutions that optimise all aspects of a mill's material flow processes by forming strong relationships with our customers. These relationships help us to make the right decisions from an early stage that move projects along the right development paths.

### Material Flow How solutions

Pesmel separates itself from its competitors by offering dynamic 3D modelling of its mill architectures. By mapping out equipment types and layouts, Pesmel is able to

demonstrate and test solutions in a tangible manner. Three-dimensional layout concepts give shape and context to possible solutions, and are the first steps along a path that can end with full-scale simulations with actual production data. In this way, multiple possible layouts can be tested, allowing us to help our customers optimise investment plans and make wise investment choices before breaking ground.

In practical terms, simulation studies accurately assess product measurements, capacities and equipment layouts, enabling our customers to analyse the total capacity of the mill. This information acts as guidance for deciding on the type of internal logistics, packing and dispatching system that should be built, as well as forming the basis of an upper-level control system for the entire process.

### Total integrated solution provider

Pesmel has an unparalleled range of in-house experts that deliver fully-formed automation solutions that are more closely adapted to our customers' needs than our competitors. All the phases of the delivery, from system engineering, manufacturing and assembly of the machinery to the installation of the system are overseen by Pesmel personnel.

We utilise a range of innovative equipment to enable smooth material flows within the mill. Our automated

coil carriage systems provide a fast, accurate means of transporting coils between production lines and single layer buffer storages, enabling the continuous operation of production functions. We also employ automated high bay storages that can act as finished goods storage as well as intermediate storage for buffering and sorting functions. At 1 third of the footprint of regular storage warehouses and with 3 times more handling capacity than overhead crane storage solutions, our automated high bay storage eliminates delivery errors and damage caused by excessive handling.

A modern mill also needs a modern control structure. Pesmel is able to integrate all levels of production and logistics control, from electrification to automation, monitoring, factory planning & management and business planning and logistics into one full chain, comprehensive platform.

Our innovative, fluid engineering process delivers solutions that dovetail perfectly with all aspects of production. By using 1 supplier for all levels of automation, Pesmel can deliver high level feedback for all production processes.

Each delivery includes Pesmel's FlowCare software solution. FlowCare facilitates the collection and exchange of data between various objects on the mill, and also provides remote monitoring and control functionalities. The collected data can be refined through analysis into powerful insights

that can in turn be used to create reports and other resources that help improve the mills' production and cost-efficiency, as well guiding the allocation of various maintenance needs.

### Tangible results

In the face of stiff global competition, efficiency of operations is crucial to our customers' survival. Pesmel has a proven track record of delivering efficiency gains for both green and brown field sites. Our ability to understand our customers' needs, optimise mill layouts, simulate production and provide solutions that take in all aspects of a mill's material flows can help our customers achieve up to 10% raises in overall efficiency on an annual basis.

What our customers get in return is higher quality production as handling and damages are reduced, minimised errors in shipping and tracking due to the removal of human error, increased employee safety and full traceability. In one case, a customer was able to reduce invoicing times by an average of 7 days due to the increased efficiency provided by Pesmel's automated systems. Another customer managed to increase sales by 15% due to shorter delivery times and being able to fulfil order deadlines that other companies were unable to meet. Pesmel's philosophy is that there is a solution to every problem – nothing is impossible. •